REMARKS

Reconsideration of this application as amended is respectfully requested.

In the Office Action, claims 1-21 were pending. Claims 1-21 were rejected. In this response, no claim has been canceled. Claims 1-3, 5, 7, 12-14, and 21 have been amended to particularly point out and distinctly claim, in full, clear, concise, and exact terms, the subject matter which Applicant regards as his invention. No new matter has been added.

In the Office Action Summary, it was indicated that the current office action is a non-final office action. However, within the detailed description of the office action, the Examiner indicated that the current office action is a final office action. Applicant hereby assumes that the current office action is NOT a final office action because Applicant respectfully believes that a final office action is improper herein.

In the last office action dated June 4, 2003, the office action was based on an incorrect claim set (e.g., the originally filed claims) instead of the latest claims filed with an RCE dated March 17, 2003. In response to the office action dated June 4, 2003, Applicant merely pointed out such a discrepancy to the Examiner without amending any claims. Therefore, a final office action herein is improper and Applicant assumes that the current office action is a non-final office action.

Claims 1-21 are rejected under 35 U.S.C. 102(a) as being anticipated by an article entitled "On-the-fly Texture Computation of Real-time Surface Shading" of Miller et al., IEEE 1998, pages 44-58 ("Miller"). Applicant hereby reserves the right to swear behind Miller in the subsequent prosecution of the present application.

It is respectfully submitted that claims 1-21 of the present application include limitations that are not disclosed by Miller. Specifically, independent claim 1 as amended recites:

> 1. A method for implementing bump mapping, comprising:
> generating a table of color values for a geometry of a polygon in view of a light source and a viewing direction of the polygon, the table of color values to be referenced by orientation-dependent color variables;
> determining vertex angle coordinates for a plurality of vertex vectors of the polygon;
> interpolating the vertex angle coordinates with vertex values of the vertices of the polygon to provide angle coordinates for each pixel in the polygon, the angle coordinates representing a direction of the vertex vector at the pixel;
> modifying the angle coordinates using a perturbation source to generate perturbed angle coordinates;
> converting the perturbed angle coordinates to one or more color variables; and
> assigning the pixel a color value from the table of color values referenced by the one or more color variables.

(Emphasis added)

Independent claim 1 includes generating a color table in view of a light source and a viewing direction of geometry of a polygon, which can be referenced by one or more color variables. The angle coordinates of the polygon may be determined based on an interpolation of vertex angle coordinates of vertex vectors corresponding to the vertices of the polygon. The angle coordinates may be further modified (e.g., bumped) to generate perturbed angle coordinates. The perturbed angle coordinates may be used to reference to the color table in order to retrieve the color values for the pixel. It is respectfully submitted that the above limitations are absent from Miller.

The Examiner contends that Miller discloses precomputed shading information tables (see, page 3 of the Office Action). However, such a precomputed shading information table is not the same as a color table for storing color values. Specifically, Miller states:

> "these tables are typically indexed by surface normal. Before computing a texture image we may, for example, compute entries in the table based on a sampled

set of normal directions. The cost of computing each texture image pixel is reduced by amortizing the table's creation cost over multiple pixels that share a common entry."

(Miller, col. 1, paragraph 6 of page 45, emphasis added)

Thus, Miller fails to disclose a color table for storing color values, particularly in view of a light source and a viewing direction as claimed in claim 1.

Similarly, although Miller discloses calculating angles for the normal vector, it is respectfully submitted that Miller still fails to disclose or suggest determining angle coordinates for the vertices of the polygon by interpolating the vertex coordinates with the vertex values associated with the vertices of the polygon and modifying the angle coordinates with a perturbation source to generate a perturbed angle coordinates, which are used to reference to the color table to obtain color values.

The Examiner further contends that Miller discloses a color table (see, page 3 of the Office Action). It is respectfully submitted that Miller's color table is used to avoid intense multiplication operations. Specifically, Miller states:

"An important special case is when the lights are all white and we wish to scale the surface texture color by a single brightness value. Normally this requires three multiplications. However, we can do this more efficiently by converting the color texture image to an indexed color image using some form of color quantization. From the color table for the pseudocolor image, we compute a 2D table whose row coordinate is the color index and column coordinate is a scaling value."

(Miller, col. 2, last paragraph of page 47, emphasis added)

Thus, the color table of Miller is not accessed based on angle coordinates as claimed in claim 1. There is no suggestion within Miller that the color table is used for the purposes of the present application. Therefore, at least for the reasons discussed above, it is respectfully submitted that independent claim 1 is not anticipated by Miller.

Similarly, independent claims 1, 7, 12, 15, 18, and 21 include limitations similar to those recited in claim 1. Thus, for the reasons similar to those discussed above, independent claims 1, 7, 12, 15, 18, and 21 are not anticipated by Miller.

Given that dependent claims 2-6, 8-11, 13-14, 16-17, and 19-20 depend from one of the above independent claims, at least for the reasons similar to those discussed above, it is respectfully submitted that claims 2-6, 8-11, 13-14, 16-17, and 19-20 are not anticipated by Miller. Withdrawal of the rejections is respectfully requested.

In view of the foregoing, Applicant respectfully submits the present application is now in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call the undersigned attorney at (408) 720-8300.

Please charge Deposit Account No. 02-2666 for any shortage of fees in connection with this response.

Respectfully submitted,

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